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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10 083,282	02 26 2002	Christopher Jones	1391-27800	4125

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EXAMINER

GABOR, OTILIA

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 07 21 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,282

Applicant(s)

JONES ET AL.

Examiner

Otilia Gabor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 26 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1-16 are objected to because of the following informalities: claim 1 contains the superfluous "the" in the last line before "a parameter". Appropriate correction is required.

The rest of the claims are objected to as being dependent from an objected claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

3. Claims 1-4, 7-11, 13, 16-20, 23-28, 32 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Cooper et al. (U. S. Patent 5317156).

Cooper et al. discloses an apparatus and method for determining the concentration of carbon isotope present in a sample, the apparatus comprises:

- a laser source 15 which is a tunable laser diode, for emitting at least one laser beam onto
- a sample cell 12S containing a sample with an unknown concentration of the carbon isotope and onto
- a reference cell 12R containing a known sample having a known concentration of the target substance

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- a detector 20S for detecting the radiation that passed through the sample cell 12S and providing a first signal indicative of the intensity of radiation after being passed through the sample cell; the signal is indicative of how much is being absorbed by the sample, which also is indicative of the sample's transmittance
- a detector 20R for detecting the radiation that passed through the reference cell 12R and providing a second signal indicative of the intensity of radiation after being passed through the reference sample; the signal is indicative of how much is being absorbed by the composition which is also indicative of the composition's transmittance
- a microprocessor 95 for receiving the first signal from the sample detector 20S and the second signal from the reference detector 20R through the processing electronics, and calculating the ratio of the signals in order to determine the concentration ratio of the sample and the reference from which the concentration of the carbon isotope in the sample is calculated.

In one embodiment, there is one laser beam generated and split so that a portion of it reaches the sample cell and another the reference cell (see Fig.3A), and in another embodiment two separate laser beams are used so that one beam reaches the sample cell and another the reference cell (see Fig.2). The sample used can contain methane (thus a hydrocarbon) (see Col.9, line 57). The temperature of the sample and the reference was controlled and kept constant (see Fig.4B). Having used two different wavelength beams through both cells, the carbon isotopic composition of individual

compounds in the sample gas mixture is calculated (i.e., the concentration of $^{13}\text{CO}_2$ relative to $^{12}\text{CO}_2$ is calculated in a mixture of gas from the breath or from methane).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 12, 14, 15, 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al.

Regarding claims 12, 29, 30 Cooper fails to limit as to where this system can be used and since measurements of carbon concentration in hydrocarbons is very important in the field of logging and drilling, and since it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed

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does not differentiate the claimed structural limitations, it would have been obvious to one of ordinary skill in the art to use the system of Cooper in a wellbore of a logging tool, where both or only one cell is included in the wellbore, as claimed. *Ex parte Masham*, 2 USPQ 2d 1647 (CCPA 1987).

Regarding claims 14, 15, 31 Cooper fails to disclose two extra detectors, (a first upstream and a second upstream) to detect radiation before the light enters the sample and reference cells, and where the processor enters the signals so detected into the calculation process of the carbon concentration, however since Cooper et al. utilizes a laser stabilization feedback control circuit to offset the concentration by the error introduced into the measurement due to the laser light, one of ordinary skill in the art would have been motivated to use the extra detectors as claimed since they provide the same function as the stabilizer circuit of Cooper et al. and because it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 549 F.2d 833, 193 USPQ 8 (7th Cir. 1979).

5. Claims 5, 6, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al. and further in view of Lee et al. (U. S. Patent 5445964).

Regarding claims 5, 6, 21, 22, Cooper fails to use a conduit as the sample cell where the fluid is flowing through, however since one would be motivated to use his method to measure isotopes in fluids, as shown in the previous paragraph, having the fluid flow through a conduit while it's being measured constitutes only a design choice since according to Lee et al. it is desirable when real time concentration measurements in fluids are done to have a flowing fluid present.

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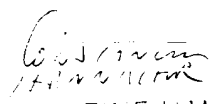
Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Sauke et al. (U. S. Patent 5543621).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 703-305-0384. The examiner can normally be reached on Monday-Friday between 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 703-308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


CONSTANTINE HANNAHER
PRIMARY EXAMINER
GROUP ART UNIT 2878

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July 8, 2003